REMARKS

Support for the amendment to the specification with respect to the concentration of butylated phenolic antioxidant finds support in claim 11 as originally filed. The amendments to the specification with respect to distributing the coating modifier to an immediately followed list of polymers is submitted to find inherent support in the specification and the claims as filed in the recitation that the inner layer being a polymeric material having a higher vapor transmission rate than the outer layer. Absent the propagation of "aluminum coated" to modify polyethylene and oriented polypropylene, then the relative vapor transmission rate differential is not satisfied. With respect to the addition of aluminum oxide coated polyester, support is found in the specification at page 6, line 20. As such, Applicant submits that no new matter has been added to the application by way of these amendments to the specification. Entry of these amendments is hereby requested.

Claims 1-5 and 11-13 are pending in this application. These claims are submitted now to be in allowable form.

Claims 1, 2 and 12 stand rejected under 35 USC 112, second paragraph, as being indefinite. Claim 11 stands rejected under 35 USC 102(b) as being anticipated by Omura et al. (U.S. Patent 4,650,847). Claims 1-5 stand rejected under 35 USC 103(a) as being unpatentable over Valyi (U.S. Patent 4,107,362) in view of Satoh et al. (U.S. Patent 6,194,061 B1). Lastly, claim 12 stands rejected under 35 USC 103(a) as being unpatentable over Valyi in view of Satoh et al. and further in view of Narsutis et al. (U.S. Patent 5,945,145) and Omura et al.

Support for the amendments to claims 1, 2, 11 and 12 are found throughout the specification and claims as filed. Support for new claim 13 is found in the specification at page 3, lines 8-9. As such, it is submitted that no new matter has been added to the application by way of amendments to these claims.

Remarks Directed to Rejection of Claims
1, 2 and 12 under 35 USC 112, Second Paragraph

The Examiner found the phrase "an adhesive layer in contact between said outer and said inner layers" indefinite. In response to this rejection, Applicant has gladly accepted the Examiner's suggestion such that the relevant phrase of claim 1 now reads "an adhesive layer between said outer and said inner layers and in contact with both said outer and said inner layers." This amendment is intended to clarify the status of the adhesive layer without changing the scope of the claim. In light of this amendment, it is now believed that the rejection of claim 1 under 35 USC 112, second paragraph, is no longer proper.

The Examiner found claim 2 to be indefinite with respect to the polymer abbreviations and the coating modification to various polymers. In response to this rejection, the Markush group of claim 2 has been amended to propagate the coating modifications throughout consistent with the specification amendment to page 5, lines 5-7. Aluminum oxide coated polyester has also been added to the Markush group of claim 2 consistent with specification text found at page 6, line 20. Otherwise, the amendments to this claim have been intended to clarify without changing the scope of the claim. In light of the above remarks and the amendments to claim 2, it is respectfully submitted that rejection of claim 2 under 35 USC 112, second paragraph, is no longer proper.

The Examiner found indefinite the phrase "such that said adhesive resealably attaches to a portion of said package" as being unclear as to what aspect of the claim this phrase modifies. In response, claim 12 has been amended to recite the "flap having a resealable peel antioxidant adhesive applied to a surface of said flap." In light of this amendment, it is now believed that rejection of claim 12 under 35 USC 112, second paragraph, is no longer proper.

In light of the above amendments and remarks, withdrawal of the rejection of claims 1, 2 and 12 under 35 USC 112, second paragraph, is hereby solicited.

Remarks Directed to Rejection of Claim 11 under 35 USC 102(b) as Anticipated by Omura et al.

Claim 11 stands rejected under 35 USC 102(b) as being anticipated by Omura et al. Claim 11 now recites a "solventless cured adhesive resin selected from the group consisting of: polyether, polyester, and polyurethane; and a butylated phenolic antioxidant . . . applied from 0.00005 to 0.001 dry pounds per square foot of a substrate."

For a reference to anticipate a claim, it is well established that every element of the claimed invention must be literally present, arranged as in the claim. In contrast to claim 11, Omura et al. is silent as to the adhesive resin being selected from polyether, polyester or polyurethane. Additionally, Omura et al. is silent as to the limitation of 0.00005 to 0.001 dry pounds per square foot of substrate. Indeed, Omura et al. cautions that the use of too much solvent in a pre-cured adhesive can result in the formation of too thin a film (column 30, lines 34-38).

In light of the above amendments and remarks, it is submitted that the rejection of claim 11 under 35 USC 102(b) is no longer proper and it is requested that it be withdrawn.

Remarks Directed to Rejection of Claims 1-5 and 12 under 35 USC 103(a)

Reconsideration of the rejection of claims 1-5 under 35 USC 103(a) as being unpatentable over Valyi in view of Satoh et al. is also respectfully requested on the basis that there is no motivation to make such a combination and if for argument's sake such a combination is made, then the resulting product is unworkable.

Valyi is cited for teaching:

> a multilayer container with two plastic barrier layers 83 and 84 that sandwich a carrier layer 85 that contains a getter 86 uniformly dispersed throughout (col. 7, lines 38-43 and Figure 6). . . . Valyi fails to teach that the inner layer has a gas transmission rate that is greater than that of said outside layer, that the middle layer 85 is an adhesive layer, and that the middle layer comprises an adhesive resin and a curing agent." (Paper No. 6, page 6, paragraph 13).

Applicant respectfully submits that the cited structure of Valyi is not that of a container or finished article, but rather a liner about which an outermost layer is injection molded (column 5, line 66 – column 6, line 12). Valyi states at column 4, lines 11-15 that "The outermost layer is preferably an inexpensive plastic such as polyolefins, polystyrene, polyvinylchloride or the like, which is injection molded around the laminate sleeve to provide additional strength and rigidity to the container at low cost." Valyi only mentions the identity of specific barrier layers at column 4, lines 3-10. Applicant submits that the oxygen permeability for the outermost layer and barrier layer of Valyi are predominantly contrary to the claimed invention in that the barrier layers contemplated by Valyi have lower oxygen gas permeabilities, as compared to outermost layers of polyethylene, polypropylene, polystyrene and polyvinylchloride. The only contemplation of a carrier layer detailed in Valyi, polyethylene (column 5, line 13) is a thermoplastic material. Applicant submits the material laminates disclosed in Valyi are only in the context of injection and blow molding.

Satoh et al. is cited to bolster the teaching of Valyi with respect to an adhesion layer formed from a polyester graft copolymer and polyurethane resin (column 2, lines 18-29) adhered to a thermoplastic laminate film and including a curing agent (column 17, lines 19-20) and an antioxidant (column 4, line 15). The Office Action thereafter states that since the adhesion is better between the thermoplastic laminate film of Satoh et al. and the adhesion layer disclosed therein, that "one of ordinary skill in the art would have recognized to use the resin composition comprising polyester and polyurethane as the material of the carrier layer 85 of Valyi, along with an antioxidant as taught by both Valyi and Satoh et al., as an adhesive layer, that bonds plastic barrier layers 83 and 84 together . . ." (paper no. 3, pages 6-7, paragraph 13).

It is respectfully submitted that one skilled in the art would in fact not be motivated to combine the references as stated in the Office Action mailed September 11, 2002 as a result of

the necessity to subsequently blow mold the liner of Valyi and in the process match the deformability between the thermoplastic laminates of Valyi. The introduction of an uncured polyurethane resin of Satoh et al. to form an intermediate layer of the liner 6 as detailed in Valyi at column 5, line 6 – column 6, line 12 is submitted to be impractical and therefore not something contemplated by one skilled in the art. Alternatively, pressing separate liner barrier layers 83 and 84 as separate molded forms, and applying the resin composition of Satoh et al. to layers 83 and 84 and then curing to form the prior art reference combination structure of Valyi having an intermediate layer of Satoh et al. is likewise impractical. This is made more so the case by the subsequent need to extrude an outermost layer thereover. Further, Valyi et al. contemplates the use of vacuum applied within a mold cavity to form the liner (or "cup-like sleeve") (column 5, lines 17-31). The presence of resin composition containing antioxidant is incompatible with vacuum owing to volatilization while cured resin is incompatible with thermal molding owing to thermal deformation differences. As a result, it is submitted that one skilled in the art would lack motivation to combine references per the Office Action of September 11, 2002.

With respect to the claim limitation that the inner layer has a gas transmission rate that is greater than that of the outer layer, the Office Action recites the various polymers taught by Valyi and concludes that "it is well within the capabilities of one of ordinary skill in the art to select particular materials for the layers 83 and 84 based on the respective gas transmission rates of well known barrier polymers" in order to satisfy the claim limitation (paper no. 3, page 7, section 13).

With respect to this aspect, it is noted that the structure depicted in Figure 6 is only that of a liner upon which an outermost layer is thereafter applied. Upon consideration of the outermost layer, it is noted that with the exception of a polyvinylchloride outer layer and some

acrylonitrile copolymers, the barrier layers of Valyi all have lower gas transmission rates than those of the outermost layer. Valyi in fact is submitted to teach that the outermost layer merely provides "additional strength and rigidity to the container at low cost" (column 4, lines 14-15), rather than as per the claimed invention where the outermost layer in fact is the primary isolation from the exterior gaseous environment. It is respectfully submitted that Valyi lacks a motivation to promote gaseous exchange between an intermediate layer containing an antioxidant by way of an inner layer while the outermost layer is essentially impenetrable to the exterior environment. It is submitted that this concept is found nowhere in the prior art of record but only in the pending claims. Finding motivation in the claimed invention is improper as hindsight construction.

In light of the above remarks, it is submitted that pending claims 1-5 are nonobvious over Valyi in view of Satoh et al. Withdrawal of the rejection of claims 1-5 under 35 USC 103(a) is respectfully requested.

Remarks Directed to Rejection of Claim 12 under 35 USC 103(a)

Applicant hereby incorporates by reference the above remarks with respect to Valyi and Satoh et al.

Claim 12 has been amended to recite the cured adhesive resin being solventless.

In contrast to the present invention, the adhesive layer of Satoh et al. is formed from a resin composition comprising a polyester graft copolymer and a polyurethane resin (column 2, lines 18-29). Satoh et al. teaches that graft polymerization occurs in an organic solvent (column 7, lines 6-23) and is thereafter dispersed in organic or aqueous solvent (column 7, lines 42-52). As the package of claim 12 is intended to protect an enclosed material from oxidation, the diffusion of solvent from a seal into such a package is potentially detrimental to the storage of

the product and contrary to the purpose of the claimed invention. Narsutis et al. and Omura et al. afford no teaching to bolster Valyi or Satoh et al. with this respect.

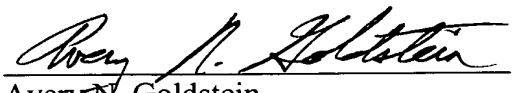
Based on the above amendments and remarks, it is now believed that claim 12 is nonobvious over the prior art of record. Withdrawal of the rejection of claim 12 under 35 USC 103(a) is respectfully requested.

Summary

Claims 1-5 and 11-13 are the claims pending in this application. Each claim is believed to be in proper form and directed to allowable and patentable subject matter. Reconsideration and allowance of the claims is solicited. If the Examiner finds to the contrary, it is respectfully requested that the undersigned in charge of this application be called at the telephone number given below in order to resolve any remaining issues.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,



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Janice R. Kueker

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning on line 1 of page 4 has been amended as follows:

Preferably, the adhesive material according to the present invention lacks a solvent. The adhesive material is prepared by mixing together the adhesive resin, curing agent and antioxidant, as well as optional additives using a meter-mix-dispensing unit or alternatively the antioxidant is premixed into a curing agent formulation which is in turn combined with the adhesive resin component. A butylated phenolic antioxidant being present in a concentration of between 1,000 and 300,000 parts per million. The adhesive material mixture is pumped onto a coating station of a laminating machine, with metering rolls on the coating station transferring the adhesive material evenly onto a thin film substrate. The adhesive mixture being applied from about 5×10^{-5} - 1×10^{-3} dry pounds per square foot of substrate. Preferably, the adhesive material is applied at between 1 and 10×10^{-4} pounds per square foot of substrate. More preferably, the adhesive material is applied at between 2.5 and 7×10^{-4} pounds per square foot. The adhesive lamination process according to the present invention is practiced at temperatures well below the boiling point of the antioxidant and ideally remain below 400°F. Preferably, adhesive lamination is conducted at temperatures between about 50°F and 300°F. More preferably, the process is conducted at between 50°F and 200°F. Still more preferably, the process is conducted at between 70°F and 150°F. Most preferably, the process is conducted between 90°F and 125°F resulting in negligible loss of antioxidant through volatilization and enhanced spreadability.

The paragraph beginning on line 21 of page 4 has been amended as follows:

A thin film substrate according to the present invention includes a flexible layer of any material used in forming packaging film laminate. An outer layer of a packaging laminate according to the present invention is characterized by being impermeable. "Impermeable" as used herein is defined to mean having a vapor transmission rate at 70°F of less than 0.80 grams per 100 square inches per 24 hours. An outer layer substrate according to the present invention includes polyvinylidene chloride (PVDC) coated polyester, PVDC coated polypropylene, aluminum coated [(]polyethylene terephthalate[)] (PET), aluminum coated [(]polyethylene[)] (PE), aluminum coated oriented polypropylene (OPP), aluminum coated nylon, aluminum oxide coated PET, aluminum oxide coated polyester, aluminum oxide coated OPP, acrylic coated polypropylene and acrylic coated PET, layers thereof, coatings thereof, and combinations thereof. Preferably, the outer layer has a thickness of between 0.05 and 2 mils. More preferably, the adhesive material is applied to a surface of the outer layer to form a laminate having a slippery outer layer surface and an exposed adhesive surface. In one embodiment of the present invention, the adhesive surface is overlayered with a thin film substrate adapted to form an inner layer of a flexible packaging laminate. The inner layer is a polymeric material having a higher vapor transmission rate than the outer layer. Preferably, the vapor transmission rate of the inner polymer layer is greater than 0.80 grams per 100 square inches per 24 hours at 70°F. The inner polymer layer illustratively includes polyethylene, polypropylene, open cell layers thereof, mixtures thereof, and block copolymers thereof. Upon sandwiching the adhesive between inner and outer layers, the resulting packaging laminate is processed to form a packaging unit. The permeability of the inner layer

allows air trapped within a sealed packaging unit to come into fluid communication with the antioxidant contained within the cured adhesive layer. The reaction of oxygen with the antioxidant thereby retards the action between a product sealed within the packaging unit and oxygen.

IN THE CLAIMS:

Claim 1 has been amended as follows:

1. (Amended) A packaging laminate comprising an impermeable outer layer; an inner layer having a gas transmission rate greater than that of said outer layer; and an adhesive layer [in contact] between said outer and inner layers and in contact with both said outer and inner layers to form said packaging laminate, wherein said adhesive layer comprises an adhesive resin, a curing agent and a butylated phenolic antioxidant.

Claim 2 has been amended as follows:

2. (Amended) The packaging laminate of claim 1 wherein the outer layer is selected from a group consisting of: polyvinylidene chloride (PVDC) coated polyester, PVDC coated polypropylene, aluminum coated [(]polyethylene terephthalate[)] (PET), aluminum coated [(]polyethylene[)] (PE), aluminum coated oriented polypropylene (OPP), aluminum coated nylon, aluminum oxide coated PET, aluminum oxide coated polyester, aluminum oxide coated OPP, acrylic coated polypropylene and acrylic coated PET, layers thereof, coatings thereof, and combinations thereof.

Claims 6-10 have been cancelled without prejudice and consistent with the election of claims 6-10 as being drawn to a non-elected invention.

Claim 11 has been amended as follows:

11. (Amended) An antioxidant adhesive film comprising: a cured adhesive resin selected from the group consisting of: polyether, polyester, and polyurethane; and a butylated phenolic antioxidant present in a concentration of between 1000 and 300,000 parts per million applied from 0.00005 to 0.001 dry pounds per square foot of a substrate.

Claim 12 has been amended as follows:

12. (Amended) A resealable package closure comprising:

a package having an outer layer forming sides and an interior volume; and

a flap extending from at least one side of said package, said flap having [an] a resealable peel antioxidant adhesive applied to a surface of said flap wherein said adhesive comprises a solventless cured adhesive resin selected from the group consisting of: polyether, polyester and polyurethane having a vapor transmission rate of greater than 0.2 grams per 100 square inches per day at 70°F; and a butylated phenolic antioxidant present in a concentration of between 1000 and 100,000 parts per million [such that said adhesive resealably attaches to a portion of said package].

New claim 13 has been added.